ENERGY ENGINEERING & MICROCOMPUTER APPLICATIONS **ENERCOMP, Inc.**

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Richard H. Karney, P.E.
Manager, Energy Star Program
United States Department of Energy
1000 Independence Avenue, SE
Washington, DC 20585

Re: **Support for Three Zone Energy Star Windows Criteria**

Dear **Rich**:

I am writing in support of the three zone criteria for the many reasons below. I appreciate the opportunity to provide these comments and DOE is to be commended for the significant effort made to document this decision and to allow all stakeholders the chance for substantial input. A job well done.

Some of the reasons I support the three zone criteria:

1. Peak Electricity Demand. I submitted a letter on issues related to the issue of peak demand during the 2002 proceeding and it is posted in the archives at the web site. The point of this letter was to emphasize that the public interest nationwide is best served by criteria that limits the solar gain because of its relationship to peak cooling demand. The three zone criteria pushes the use of low solar gain low e to more areas of the country that use air conditioning.

2. Reducing peak demand reduces the need for new powerplants, transmission lines and distribution facilities. The marginal cost of providing electric power with these new facilities is far more expensive than current consumer energy prices. The reliability of the electric grid in our nation is also linked to peak demand issues as problems are most likely to occur when there is inadequate peak generating capacity. With the three zone version—more of the country would be using low solar gain products that will help to reduce peak demand related costs and problems.

3. The letter from 2002 also points out that standard site-to-source conversion (typically around 3) in the DOE analysis understates the value of on-peak energy consumption significantly. The cooling savings estimated for the three zone case in Table 2 of the DOE analysis would be much higher with a more realistic site-to-source conversion.

4. From doing thousands of building computer simulations I have found that relatively small changes in assumptions can change results significantly, especially assumptions that can shift the balance of heating and cooling. Therefore, I would urge caution in basing too much of the criteria choice on the energy use predictions

alone. For example, the assumptions used in the DOE study have a 10% higher effective solar heat gain in the winter than in the summer because of the treatment of interior shading. This tilts the energy savings calculations towards the benefits of passive solar gain during the winter rather than the benefits of low solar gain during the summer.

5. The three zone criteria is simpler. In my experience with market transformation training efforts in California and Texas, one of the main benefits of Energy Star is that the message is simple. More climate zones means less simplicity.

6. Low solar gain low e products also typically have the lowest U-factors. This makes these products the most efficient and most comfortable during times when there is no solar gain on a given window which is a majority of the hours of the day, especially during the winter.

With regards to aluminum products in the southern region of the country where the U-factor has been lowered to 0.65, it is very important that it be understood that the new NFRC 2001 rating program being implemented right now offers lower U-factors for aluminum and aluminum thermal break products. In my experience operating WESTLab, an NFRC accredited laboratory, most residential aluminum framed products will easily be able to hit the 0.65 U-factor and 0.40 SHGC with dual glazing and a low solar gain low e—a very practical and reasonable to produce product. Thermal break products will also easily meet this revised criteria.

While I urge your selection of the three zone criteria, no matter what criteria is selected, I believe that it is important that one of these proposals be selected and implemented. The existing Energy Star criteria is looking old at this point and the marketplace in many southern and central regions has moved beyond the current criteria. Both of the proposals have significant benefits in terms of expanding the central (yellow) portions of the country into the very cost effective 0.40 U-factor and 0.40 SHGC products that have become widely available since the original criteria was set.

Sincerely,

Ken Nittler, P.E.
Enercomp, Inc.